

Oregon Coast Coho Conservation Plan

2014 Annual Report

The Oregon Coast Coho Conservation Plan (OCCCP) was adopted by the Oregon Fish and Wildlife Commission in March, 2007. The plan serves as the State of Oregon's management plan for the Oregon Coast (OC) coho salmon evolutionarily significant unit (ESU).

ESU Status Summary

In 2014, the OC coho salmon ESU had approximately 359,624 naturally-produced spawners, which was 44% of the abundance goal identified in the OCCCP. Abundance significantly increased from 2013 (124,411), and all five strata were substantially above the 24-year average abundance. Wild spawner abundance in 2014 was the highest for the OC coho salmon ESU since random surveys were implemented in 1990. All data reviewed suggested that the strategies in the OCCCP should continue to be implemented without revision. Habitat restoration planning and implementation actions to address key limiting factors occurred across the ESU to support OC coho salmon conservation and recovery.

Terminal (estuary/freshwater) wild coho salmon fisheries were implemented in thirteen river basins under the Coastal Rivers Fishery Management and Evaluation Plan (FMEP) approved by NOAA Fisheries in 2009. Estimated spawning escapement for the ESU, following ocean and in-basin harvest impacts, was significantly higher (359,624) than the Pacific Fishery Management Council's (PFMC's) forecast (230,600). Based on observations of conservative harvest in fisheries conducted since 2009, many fisheries in 2014 were implemented with fixed seasons without quotas or creel sampling. Fisheries with quotas and creel sampling occurred in the Umpqua, Beaver Creek in Lincoln County, and Floras/New River system in Curry County. Creel-monitored terminal fishery harvest rates were consistent with the conservation measures identified in the FMEP.

The Western Oregon Rearing Project (WORP) monitoring of parr abundance in pools and the Oregon Adult Salmonid Inventory & Sampling (OASIS) monitoring of abundance of female spawners that produced them, suggests there are limitations to parr production in freshwater habitats.

Data Reviewed

Coho Adult Monitoring

Wild OC coho salmon spawner abundance increased to 359,624 wild spawners in 2014; this is the highest level recorded during the previous 24 years. This represents 156% of the PFMC pre-

harvest abundance estimate of 230,600 OC coho salmon. Additionally, individual populations were higher in 2014, with 22 of the 24 populations above average, with only 2 populations at or below 75% of the average (Floras Creek and Mid-South Dependents). Coquille had the highest wild coho abundance in 2014, accounting for 12% of the ESU total abundance. Distribution and density of wild coho salmon spawners increased in 2014 in comparison to 2013; and 19 of the 21 populations had higher wild fish per mile densities in 2014 than in 2013.

Figure 1 depicts the OC coho salmon spawner estimates for years 2000-2014, compared to the Amendment 13 (A-13) full seeding level.

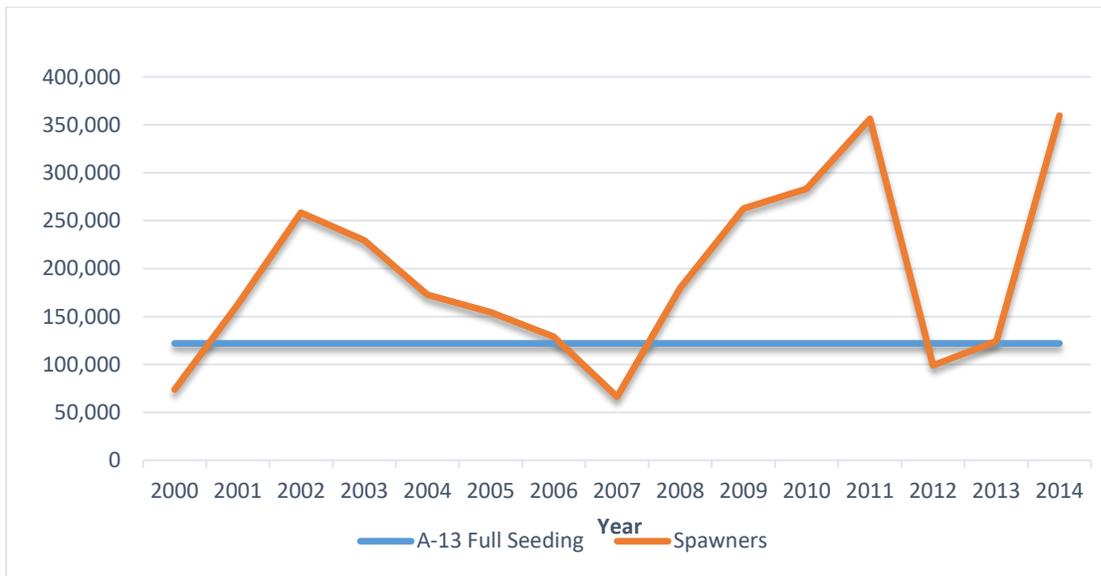


Figure 1.

Coho Juvenile Monitoring

The WORP monitoring program calculates fish density estimates using snorkel surveys to get visual estimates, and dividing the number of fish by the surface area of the pool they are located in. The OC coho salmon ESU juvenile density estimate in 2014 was lower than the recorded high estimate for 2013. Additionally, the 2014 density estimate was also lower than the 1998-2013 average for the ESU. Site occupancy in 2014 was similar to 2013. Density estimates and the percent of full seeding since the start of monitoring are shown for each of the four Oregon Coast coho salmon monitoring areas in Figure 2.

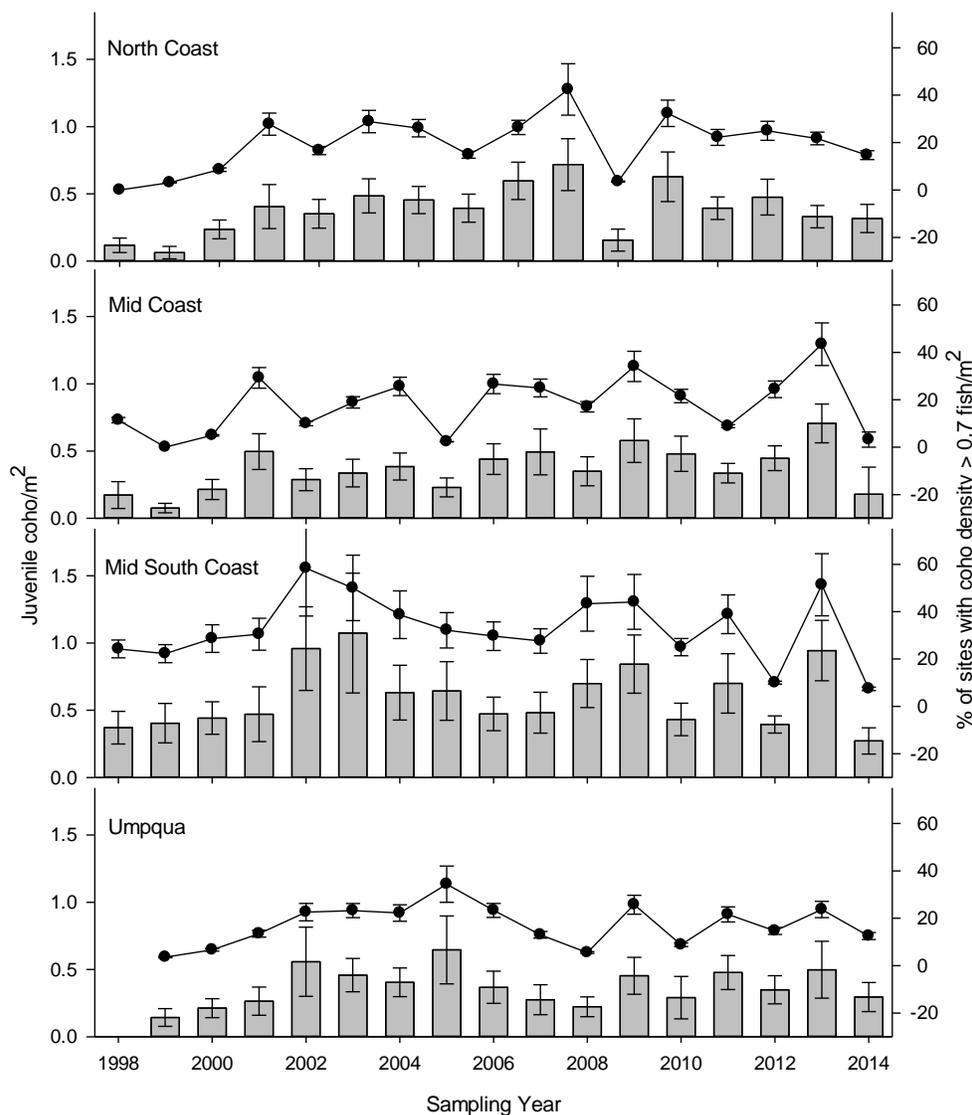


Figure 2. Annual trends in density and full seeding for juvenile coho salmon in monitoring areas of the OC coho salmon ESU, based on snorkel surveys in 1st-3rd order stream reaches. Panels are organized by monitoring strata. Gray bars are for mean average density (coho/meter²) and black dots are the percent of fully seeded sites based on A-13 calculations.

Habitat

The most recent OC coho salmon habitat condition evaluation was completed by the Aquatic Inventories Project for 2006-2010 data across four monitoring strata (North Coast, Mid-Coast, Mid-South Coast, and Umpqua) in the OC coho salmon ESU. The assessment found that winter rearing habitat continues to be limited with low pool complexity and structure, and the amount of gravel relative to fine substrate resulted in high quality spawning and summer rearing habitats. Coho salmon winter rearing capacity ranged from 1733 parr/km in the North Coast to 1122 parr/km in the Umpqua. The Mid-Coast had the most sites with high quality habitat (52 sites),

and the Mid-South Coast had the highest percentage of high quality habitats (21% \pm 6.67%). In contrast, the Umpqua had the fewest sites with high quality habitat (15 sites) and the lowest percentage of high quality habitats (12.29% \pm 5.05%). The median values for most of the habitat attributes evaluated were within the range of the upper and lower breakpoints designated by reference conditions.

WORP monitoring of parr abundance in pools and OASIS monitoring of abundance of female spawners that produced them, suggests there are limits in freshwater habitat to parr production when spawner abundance exceeds approximately 80,000 females. Parr production rates typically decrease when female spawner abundance increases.

Coho Harvest Impact

OC coho salmon harvest is managed by the Pacific Fishery Management Council (PFMC) following direction under A-13 to their Fishery Management and Evaluation Plan. A-13 uses a conservative harvest matrix found by NOAA Fisheries to be consistent with the recovery of OC coho salmon.

The combined ocean and freshwater harvest impacts to OC natural coho salmon in 2014 were approximately 14.4% of the estimated abundance. This is less than the 25.3% projected pre-season harvest impact and under half of the 30% allowed maximum under the A-13 harvest matrix.

Coho Natural Fish Survival Rates

As part of the Oregon Plan for Salmon and Watersheds, the Salmonid Life Cycle Monitoring (LCM) project monitors migration and survival of salmonids in western Oregon streams. The LCM project estimated marine and freshwater survival rates for OC coho salmon using abundance estimates of spawning adult and out-migrant juvenile OC coho salmon that passed through seven ODFW LCM sites. The OASIS program conducts naturally spawning coho salmon surveys annually across the ESU, this provides a more expansive dataset for estimating natural fish survival rates.

Wild spawner abundance in 2014 was the highest for the OC coho salmon ESU since random spawning surveys were implemented in 1990. All naturally spawning OC coho salmon populations in the ESU, with the exception of the Mid-Coast dependent and South Umpqua populations, contained greater than 95% wild fish.

Conservation Project Implementation

In 2014, ODFW continued to implement its commitments identified in the OCCCP. The status of those commitments are discussed below by action, as identified in the OCCCP.

Hatchery Management- This commitment was implemented and is on-going. The last hatchery coho releases into the North Umpqua occurred in May, 2006. The last hatchery releases into the Salmon River occurred in May, 2007.

Harvest Management- This commitment was implemented and is on-going. Harvest impact rates to naturally-produced OC coho salmon from fisheries continues to be managed through the PFMC's Salmon Fishery Management Plan and the use of Amendment 13 Harvest Management Matrix, found by NOAA Fisheries to be consistent with the recovery of OC coho salmon.

Western Oregon Stream Restoration Program- This commitment was implemented and is on-going. However, budget constraints have led to a reduction in ODFW staff to support this program. High priority habitat restoration projects that create high quality OC Coho rearing habitat continue to be developed and implemented at a reduced scale across the ESU. Priority is placed on projects with willing landowners in areas that support high quality OC Coho rearing habitat. Technical assistance is being provided to local partners; and new restoration techniques for addressing key limiting factors are continually being explored.

Habitat Protection- This commitment was implemented and is on-going. ODFW staff continues to work collaboratively with multiple agencies on habitat related actions.

Promote Beaver Dams and Associated Habitat- This commitment was implemented and is on-going. ODFW continues to coordinate a Beaver Workgroup with a variety of participants that work collectively to improve understanding of beaver ecology, and promote beaver dams in OC Coho rearing habitats that support the objectives of the OCCCP.

Research, Monitoring and Evaluation Program- This commitment was implemented and is on-going. ODFW continues to conduct research, monitoring, and evaluation related to the OCCCP. In 2014, ODFW designed and implemented a watershed-scale, large wood placement research and monitoring project in the Mill Creek –Siletz watershed. The goal of the project is to identify the relationship between fine-scale geomorphic responses to large wood addition and reach-scale habitat conditions, then link these changes to fish survival and production at the basin scale. The project included use of a Life Cycle Monitoring site, Aquatic Habitat Inventory, Habitat Limiting Factors Model, and a full-basin wood survey as guidance in designing a large wood debris project to add stream complexity, specifically winter rearing habitat, which is the primary limiting factor affecting smolt production in the Mill Creek Watershed. The Life Cycle Monitoring long-term monitoring framework was already in place, creating the opportunity to evaluate the large wood placement effects on coho salmonids. Effectiveness monitoring is being conducted annually for 6 years. The goals for effectiveness monitoring are as follows:

1) To determine the degree to which the project's restoration treatments meet its overall purpose including a) enhance in-stream ecological function and condition, b) address the winter rearing limiting habitat factor for fish production, and c) increase fish production in the Mill Creek Watershed.

2) To understand the relationship between channel geomorphology, aquatic habitat, benthic macroinvertebrate assemblages, and fish production following large wood placement in an actively managed watershed.

3) To evaluate the temporal and spatial recovery of watershed functions after instream restoration.

4) To determine the applicability of the Habitat Limiting Factors Model as a restoration planning and assessment tool.

5) To provide scientifically-sound data to help guide other similar projects and advance the understanding of watershed restoration and fish production; and to disseminate that information to other practitioners, resource managers, decision-makers, and scientists.

By 2022, sufficient data is expected to make an initial evaluation of the effect of large wood addition on the abundance of coho salmon smolts and other salmonid out-migrants from Mill Creek, in addition to potential changes in the coho spawner-smolt recruit relationship at this site. Ongoing data collection at Mill Creek and other Life Cycle Monitoring sites will provide excellent opportunities to evaluate long-term restoration effects on salmonid populations.

Oregon Plan Outreach Program- This commitment was implemented and is on-going. ODFW has designated staff to coordinate with key partners on actions to address the objectives in the OCCCP.

The Oregon Coast Coho Conservation Plan established six measurable criteria for the assessment of conservation status of the 21 independent populations in the OC coho salmon ESU. More information on the analyses of the measurable viability criteria identified in the OC coho salmon conservation and recovery plans can be found at the ODFW Recovery Tracker on the link provided here. <http://www.odfwrecoverytracker.org>

Recommendations Regarding the ESU

ODFW Recommendation 1) Continue implementation of all agency actions.

ODFW Recommendation 2) Identify and secure alternative funding for the Western Oregon Stream Restoration Program. On-going implementation of this commitment will require a sustainable budget to maintain the level of coordination, technical assistance, and habitat restoration needed to address the primary limiting factors for the OC coho salmon ESU.

The OWEB Investment Tracking Tool was used to identify activities that OWEB funded in 2014, to support conservation and recovery of the OC coho salmon ESU. Figure 3 summarizes those OWEB investments by category for each OC coho salmon population.

Population	Education/ Outreach	Acquisition	Monitoring	Restoration	Technical Assistance	Total
North Coast						-
Necanicum						-
Nehalem			\$ 36,362	\$ 487,803	\$ 117,000	\$ 641,165
Tillamook		\$ 65,000	\$ 125,548	\$ 525,389	\$ 21,900	\$ 737,837
Nestucca				\$ 41,972		\$ 41,972
Mid-Coast	\$ 23,500			\$ 12,333	\$ 50,000	\$ 85,833
Salmon						-
Siletz			\$ 222,006	\$ 110,399		\$ 332,405
Yaquina				\$ 2,500		\$ 2,500
Beaver				\$ 4,868		\$ 4,868
Alsea				\$ 22,448	\$ 25,356	\$ 47,804
Siuslaw	\$ 40,869		\$ 11,110	\$ 58,457	\$ 241,819	\$ 352,255
Lakes						-
Siltcoos	\$ 10,285			\$ 126,452		\$ 136,737
Tahkenitch						-
Tenmile			\$ 125,997			\$ 125,997
Umpqua						-
Lower Umpqua				\$ 43,700		\$ 43,700
Middle Umpqua				\$ 167,240		\$ 167,240
North Umpqua				\$ 177,563	\$ 91,649	\$ 269,212
South Umpqua						-
Mid-South Coast						-
Coos	\$ 33,000		\$ 145,361	\$ 580,212	\$ 38,226	\$ 796,799
Coquille				\$ 30,287		\$ 30,287
Floras						-
Sixes						-

Figure 3. OWEB 2014 Investments in the OC coho salmon ESU.